

Remarks

The present Response is to the Office Action mailed 02/20/2009. Claims 36 and 37 are presented for examination.

Claim Rejections-35 USC§ 103

4. Claims 36 and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Simons (US 6,332,198 B1) in view of Battou et al. (US 20030163555).

Simons discloses a distributed processor packet router, comprising: a plurality of primary line cards (16a-16b) each comprising a plurality of communication ports (44a-44d), connected to lines external to the packet router (see Figs. 1 and 5) , and each comprising a processor (26a-26b; 22a-22b) executing software managing operation of the primary line card (16a-16b), including the plurality of communication ports (31a-31c);

a backup line card (16n) comprising a backup communication port (31x) connected to a line external to the packet router, a communication link to each of the primary line cards (32-34), a processor (26n, 22n) executing software managing operation of the backup line card, including the backup communication port (31x), and a digital memory (30) (column 7, lines 25-57); and

a control card (12) having a digital communication link to each of the primary (16-16b) and the backup line cards (16n) (column 7, lines 25-41);

wherein the control card communicates state and configuration data regarding the plurality of communication ports to the digital memory at the backup line card, the data including priority ranking for individual ones of the communication ports, and in the event of failure of one of the plurality communication ports, the processor at the primary line card supporting that communication port instructs the processor at the backup line card to operate the backup communication port using the state and configuration data that is stored in the digital memory for the failed communication port (column 16, lines 56-67; column 47, lines 52-65). Further, Simons discloses that vertical fault isolation allows processes to be deployed in a fashion supportive of the underlying hardware architecture and allows processes associated with particular hardware (e.g., a port) to be isolated from

processes associated with other hardware (e.g., other ports) on the same or a different line card (column 33, lines 26-38). However, Simons does not expressly disclose that a backup line card to drop backup services for one port in order to perform backup communication for a port having a higher priority.

Battou teaches a pre-emptable traffic that is removed from the backup fiber, which is then used for transport of higher-priority traffic (0289).

It would have been obvious to one ordinary skill in the art at the time the invention was made to add a method that drops backup services for one port in order to perform backup communication for a port having a higher priority, such as that suggested by Battou, in the method of Simons in order to provide a maximum flexibility in redundancy schemes.

Applicant's response:

Applicant presents arguments that the cited portion of Simons does not actually teach what the Examiner states it teaches. The Examiner states Simons teaches, "wherein the control card communicates state and configuration data regarding the plurality of communication ports to the digital memory at the backup line card, the data including priority ranking for individual ones of the communication ports, and in the event of failure of one of the plurality communication ports, the processor at the primary line card supporting that communication port instructs the processor at the backup line card to operate the backup communication port using the state and configuration data that is stored in the digital memory for the failed communication port (column 16, lines 56-67; column 47, lines 52-65).

Applicant presents the cited portions of Simons below:

The user will select which ports (e.g., 44a-44d, 46a-46f, 68a-68n) the NMS should enable. There may be instances where some ports are not currently needed and, therefore, not enabled. The user also needs to provide the NMS with information about the type of network connection (e.g., connection 70a-70d, 72a-72f 74a-74n). For example, the user may want all ports 44a-44d on line card 16a enabled to run AIM over

SONET. The NMS may start one ATM application to control all four ports, or, for resiliency, the NMS may start one ATM application for each port. Alternatively, each port may be enabled to run a different protocol (e.g., MPLS, IP Frame Relay).

The traffic management chips ensure that high priority traffic, for example, voice data, is passed to switch fabric card 570a faster than lower priority traffic, for example, e-mail data. The traffic management chips may buffer lower priority traffic while higher priority traffic is transmitted, and in times of traffic congestion, the traffic management chips will ensure that low priority traffic is dropped prior to any high priority traffic. The traffic management chips also perform an address translation to add the address of the traffic management chip to which the data is going to be sent by the switch fabric card. The address corresponds to internal virtual circuits set up between forwarding cards by the software and available to the traffic management chips in tables.

The first portion of the cited portion of Simons teaches a user's ability to enable and disable ports on a line card and the user may configure ports to run with different protocols. The second portion teaches traffic management chips for switching high priority traffic ahead of lower priority traffic through the switch fabric card, wherein lower priority traffic may be buffered or dropped by the traffic management chips. Address translation may also be performed adding the address of the traffic management chip to which the data is going to be sent by the switch fabric card.

Applicant fails to find any teaching or suggestion in the cited portions of Simons remotely related to communicating, by a control card, state and configuration data including priority ranking for individual ones of the communication ports or the limitation regarding implementing priority of ports in a back-up procedure for port failure. Simons may store information regarding port protocol and instruct a controller to enable or disable a port. Simons may teach that a driver device may detect a fault in an individual port. But the ports are not prioritized and stored in the digital memory of a back-up line card for the purpose of fault recovery, as taught and claimed in applicant's invention.

The Examiner continues, “However, Simons does not expressly disclose that a backup line card to drop backup services for one port in order to perform backup communication for a port having a higher priority.” Applicant points out that the phrase espoused by the Examiner is not a limitation in applicant’s independent claims, which recite, “the processor at the backup line card follows the instruction if the backup port is at that time not in use, and if the backup port is in use, follows the instruction only if the priority of the newly failed communication port is higher ranking than the port for which backup is at that time being performed. Simons does not include any teaching of backing up to a port that is in use and the Examiner has not shown the teaching in the art.

The Examiner relies upon Battou to teach a pre-emptable traffic that is removed from the backup fiber, which is then used for transport of higher-priority traffic (0289). Again, applicant argues that this teaching of Battou espoused by the Examiner is not the actual limitation in question. The actual limitation recites, “follows the instruction only if the priority of the newly failed communication port is higher ranking than the port for which backup is at that time being performed.” The portion of Battou is presented below:

[0289] Moreover, the backup fiber (here, the fiber between nodes 2-4-5) need not be used under normal conditions (FIG. 33(a)). However, pre-emptable traffic, e.g., lower priority traffic, may be allowed to use the backup fiber until a failure occurs. Once a failure occurs, the pre-emptable traffic is removed from the backup fiber, which is then used for transport of higher-priority traffic. The client having the lower-priority traffic is preferably notified of the preemption.

Applicant argues that the nodes as taught in Battou are optical configurable switches. Surely the Examiner is not applying a teaching of switches, including a plurality of line cards, switching fabric, etc. and fibers between to read on an individual port and its functionality as claimed in applicant’s invention. Also, applicant points out that it is the data, not the switches that are prioritized in Battou.

Applicant believes that independent claims 37 and 36 are patentable over the art of Simons and Battou, either singly or in combination, as argued above.

Summary

As all of the claims, as amended and argued above, have been shown to be patentable over the art presented by the Examiner, applicant respectfully requests reconsideration and the case be passed quickly to issue.

If any fees are due beyond fees paid with this amendment, authorization is made to deduct those fees from deposit account 50-0534. If any time extension is needed beyond any extension requested with this amendment, such extension is hereby requested.

Respectfully Submitted,
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